

Numerical Simulation of the Anomalous Transport of High-Energy Cosmic Rays in Galactic Superbubbles

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A continuous-time random-walk (CTRW) model to simulate the transport and acceleration of high-energy cosmic rays in galactic superbubbles has recently been put forward (Barghouty & Schnee 2102). The new model has been developed to simulate and highlight signatures of anomalous transport on particles' evolution and their spectra in a multi-shock, collective acceleration context. The superbubble is idealized as a heterogeneous region of particle sources and sinks bounded by a random surface. This work concentrates on the effects of the bubble's assumed astrophysical characteristics (cf. geometry and roughness) on the particles' spectra.

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